UNITED STATES PATENT AND TRADEMARK OFFICE

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10/751,530	01/06/2004	Junichi Komagata	SON-2895	3306

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EXAMINER
SOL, ANTHONY M

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>13 November 2009</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>27-48</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>27-48</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>13 November 2009</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

- Applicant's Amendment filed 8/3/2006 is acknowledged.

- Claims 1-26 have been canceled.

- Claims 27-48 have been added.

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 27, 28, 31-33, 35-40, 42-44, and 48 are rejected under 35 U.S.C. 102(e)

as being anticipated by U. S. Patent No. 6,560,230 B1 ("Li").

Regarding claims 27, 28, 32, 36, 39, 40, 44, and 48,

Li shows in fig. 8 confirming presence or absence of a real time packet request

(see block 207, "ANY HIGH PRIORITY PACKETS?", Li describes high priority as "real

time." See col. 13, lines 39-40), said real time packet request commanding a stream

transmitting portion to schedule a transmission of a real time packet (col. 13, lines 35-

67, *The steps of **selecting and forwarding high priority packets** may be performed*

as a single step).

Li further shows in fig. 8 confirming presence of a non-real time packet request

("YES" to question of "ANY LOW PRIORITY PACKETS" in block 211) or absence ("NO"

to question of "ANY LOW PRIORITY PACKETS" in block 211, wherein low priority as

"best effort." See col. 13, line 40) only after confirming the absence of said real time

packet request (col. 13, lines 45-47, *If there are no queued high priority packets then*

the method selects all queued low priority packets (step 208), said non-real time packet

request commanding said stream transmitting portion to schedule a transmission of a

non-real time packet (col. 13, lines 48-49, *and continues by **forwarding** the low priority*

packet with the smallest finish time F (step 210))(see col. 13, lines 35-67 for detailed

description of fig. 8).

Li shows in fig. 5, a packetizing block 124 that packetize streams of data into

streams of packets 51 (claim 36, see col. 6, lines 12-14, *Each ESP 24 receives*

***streams of packets** from its associated LAN and from WAN 22. These packets*

typically belong to at least several different flows).

Li further shows in fig. 5, a stream transmitting portion 124, in particular scheduler 50 and forwarder 58 (claim 36).

Regarding claims 31 and 37,

Li discloses that it is not usually critical that e-mail be delivered instantly (claimed *stream of text data is packetized into a stream of non-real time packets*). Note that e-mails contain text data.

Regarding claims 33, 42, and 43,

Li discloses that the leaf scheduling engine 60 will <u>select for transmission</u> the eligible packet 51 which meets a selection criterion (step 114). Preferably the selection criterion is a <u>first to finish selection criterion so that the eligible packet that has the earliest finish time F is selected</u> (col. 11, lines 35-40).

Regarding claims 35 and 38,

Li discloses that transmitting a <u>video</u> signal (claimed *moving picture*) for a video conference requires fairly large bandwidth, <u>short delay</u> (or "latency"), <u>small delay jitter</u> (claimed *real time*), and reasonably small data loss ratio (col. 1, lines 59-62).

Li further discloses that in FIG. 4 class 40 contains voice traffic. Class 40 may be termed a "real time" class because it is important to deliver packets in class 40 quickly enough to allow a <u>real time</u> <u>voice</u> conversation (claimed *audio data*) between two people (col. 7, lines 23-28).

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 29, 30, 34, 41, and 45-47, are rejected under 35 U.S.C. 103(a) as being

unpatentable over Li in view of Pub. No. 2004/0114516 A1 ("Iwata"). Note that Iwata

has been cited in previous Office actions.

Regarding claims 29, 46, and 47,

Li does not explicitly disclose that the scheduling times for the real time packets

are compared to a transmission end time for the non-real time packet, said non-real

time packet being transmitted prior to transmissions of the real time packets when said

transmission end time for the non-real time packet occurs before any of the scheduling

times.

Iwata discloses that if the packet queued last in the scheduling queue 31 is a

"low priority packet", the scheduler section 3 <u>checks whether or not the transmission</u>

<u>end time of the "low priority packet" is earlier than the transmission start time of the</u>

<u>received "premium packet"</u> (claimed *transmission end time for the non-real time packet*

occurs before any of the scheduling times) based on the transmission start time and the

packet length of the "low priority packet" (in steps 106 and 107). If the check result

shows that the transmission end time of the "low priority packet" is earlier than the

transmission start time of the received "premium packet" (YES in the step S107), the

scheduler section 3 queues, as one piece of data, information representing that the

packet is a "premium packet", the transmission start time information and information on

the length of the packet, at the end of the scheduling queue 31 (in steps 107 and 105)

(para. 36).

Iwata further discloses that the scheduling is thus completed (in a step 112). The

scheduler 32 notifies the packet output section 5 of the queue information (indicating the

premium packet queue 21 or the low priority packet queue 22) included in the data at

the top of the scheduling queue 31 at output start time, and requests the packet output

section 5 to transmit the packet…According to this embodiment, it is possible to transmit

the "low priority data" without influencing the transmission of the "premium data"

(claimed *non-real time packet being transmitted prior to transmissions of the real time*

packets; para. 39).

It would have been *prima facie* obvious to one of ordinary skill in the art at the

time of the invention was made to modify the packet scheduling method of Li to transmit

"low priority data" prior to transmissions of the real time packets as taught by Iwata. One

skilled in the art would have been motivated to make the combination so that non-real

time packets can be transmitted fairly (Li, col. 3, lines 50-53).

Regarding claims 30, 34, 41, and 45,

Li does not explicitly disclose that the non-real time packet is transmitted during a time interval between transmissions of the real time packets when said time interval is longer than a transmission time for the non-real time packet.

Iwata discloses that if the packet queued last in the scheduling queue 31 is a "low priority packet", the scheduler section 3 checks whether or not the transmission end time of the "low priority packet" is earlier than the transmission start time of the received "premium packet" based on the transmission start time and the packet length of the "low priority packet" (in steps 106 and 107). <u>If the check result shows that the transmission end time of the "low priority packet" is earlier than the transmission start time of the received "premium packet" (YES in the step S107), the scheduler section 3 queues, as one piece of data, information representing that the packet is a "premium packet", the transmission start time information</u> and information on the length of the packet, at the end of the scheduling queue 31 (in steps 107 and 105) (claimed *non-real time packet is transmitted during a time interval between transmissions of the real time packets when said time interval is longer than a transmission time for the non-real time packet)*(para. 36).

Iwata further discloses that the scheduling is thus completed (in a step 112). The scheduler 32 notifies the packet output section 5 of the queue information (indicating the premium packet queue 21 or the low priority packet queue 22) included in the data at the top of the scheduling queue 31 at output start time, and requests the packet output section 5 to transmit the packet…According to this embodiment, it is possible to transmit

the "low priority data" without influencing the transmission of the "premium data"

(claimed *non-real time packet is transmitted…)*

It would have been *prima facie* obvious to one of ordinary skill in the art at the

time of the invention was made to modify the packet scheduling method of Li to transmit

"low priority data" during a time interval between transmissions of the real time packets

as taught by Iwata. One skilled in the art would have been motivated to make the

combination so that non-real time packets can be transmitted fairly (Li, col. 3, lines 50-

53).

Response to Arguments

5.   Applicant's arguments filed 4/23/2009 have been fully considered but they are

not persuasive.

-        The applicant argues on pg. 14 of Remarks that Li does not disclose, teach or

         suggest the following limitations: "*confirming presence or absence of a non-

         real time packet request only after confirming the absence of said real time

         packet request, said non-real time packet request commanding said stream

         transmitting portion to schedule a transmission of a non-real time packet"* as

         is in claim 27 and "*a stream transmitting portion configured to confirm

         presence or absence of a real time packet request and to confirm presence or

         absence of a non-real time packet request, the presence or absence of the

         non-real time packet request being confirmed only after confirming the

         absence of said real time packet request"* as is in claim 36.

- The examiner respectfully disagrees. Please see the updated rejections to claims 27 and 36 above using the Li reference for how Li teaches the aforementioned limitations of claims 27 and 36. The updated rejections are in response to the new set of claims presented.

Conclusion

6.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY SOL whose telephone number is (571)272-5949. The examiner can normally be reached on M-F 7:30am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

/A. S./

Examiner, Art Unit 2465

2/17/2010

/Jayanti K. Patel/
Supervisory Patent Examiner, Art Unit 2465